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5 AUTOMOTIVE IGNITION MONITORING SYSTEM
 WITH MISFIRE AND FOULED PLUG DETECTION

Abstract Of The Disclosure

10 An automotive ignition diagnostic system includes an ion current
 detection circuit producing a buffered representation of an ion current flowing
 across an electrode gap of an ignition plug in response to a bias voltage applied
 thereto. An ignition diagnostic circuit is responsive to the buffered representation
 of the ion current to charge a single integration capacitor. The diagnostic circuit
 is operable to produce an output signal having a pulse width defined by the
 amount of charge on the capacitor. When the ion current flows following a
15 combustion event, the width of the output signal is controlled as a function of the
 quality of combustion in the corresponding cylinder. However, if sufficient ion
 current flows prior to combustion, the width of the output signal is controlled to
 indicate a fouled ignition plug.